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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/563,054 | 01/03/2006 | Markus Meier | 32860-000979/US | 8166 |

30596 7590 08/09/2007
HARNESSE, DICKEY & PIERCE, P.L.C.
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RESTON, VA 20195

EXAMINER

CRUZ, LESLIE PILAR

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2826

| MAIL DATE | DELIVERY MODE |
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08/09/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/563,054 | Applicant(s) MEIER, MARKUS | |
| | Examiner Leslie P. Cruz | Art Unit 2826 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 11, 12 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 13-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Minhloan Tran

Minhloan Tran
Primary Examiner
Art Unit 2826

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>01/03/2006 & 01/31/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I, drawn to an electronic power module, in the reply filed on 09 April 2007 is acknowledged.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The Information Disclosure Statement(s) filed on 03 January 2006 and 31 January 2006 have been considered.

Oath/Declaration

The oath or declaration filed on 03 January 2006 is acceptable.

Drawings

The drawings filed on 03 January 2006 are acceptable.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 and 8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohki et al. (US 5,886,408), hereinafter Ohki.

With respect to claim 1, Ohki (Figs. 2A, 2B, 3) discloses an electronic power module, comprising: a first [6] and a second [12] cooling device; a semiconductor device [3], arranged between the first and the second cooling device; an elastic annular element [7], arranged around the semiconductor device, a space within the elastic annular element being encapsulated and being partially bounded by the first and second cooling devices, and the semiconductor device being located in the space [column 9 lines 48-50].

With respect to claim 2, Ohki discloses the electronic power module as claimed in claim 1. Ohki (Figs. 2A, 2B, 3) discloses the first and second cooling devices each include at least one heat sink [6, 12, column 8 lines 32-49].

With respect to claim 8, Ohki discloses the electronic power module as claimed in claim 1. Ohki [column 8 lines 59-60] further discloses the annular element is composed of rubber.

With respect to claim 9, Ohki discloses the electronic power module as claimed in claim 1. Ohki (Figs. 2A, 2B, 3) further discloses the annular element is of a size which is substantially constant in the axial direction, so that a prespecified air gap [24, 25] and creepage distance are ensured between the first and second cooling devices.

Claims 1-4, 10 and 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki et al. (US 2001/0014027 A1), hereinafter Suzuki.

With respect to claim 1, Suzuki (Figs. 1-4) discloses an electronic power module, comprising: a first [1] and a second [104, 105] cooling device; a semiconductor device [102, 103], arranged between the first and the second cooling device; an elastic annular element [10], arranged around the semiconductor device, a space within the elastic annular element being encapsulated and being partially bounded by the first and second cooling devices, and the semiconductor device being located in the space [paragraph 0034].

With respect to claim 2, Suzuki discloses the electronic power module as claimed in claim 1. Suzuki (Figs. 1-4) discloses the first and second cooling devices each include at least one heat sink [paragraph 0028].

With respect to claim 3, Suzuki discloses the electronic power module as claimed in claim 1. Suzuki (Figs. 1-4) further discloses at least one of the first and second cooling device include a metal rail [104] for directly transporting heat away from the semiconductor device and for making electrical contact with the semiconductor device.

With respect to claim 4, Suzuki discloses the electronic power module as claimed in claim 3. Suzuki (Figs. 1-4) further discloses the respective metal rail and the at least one heat sink are integral.

With respect to claim 10, Suzuki discloses the electronic power module as claimed in claim 1. Suzuki (Figs. 1-4) further discloses the annular element includes an opening [5] or cutout through which at least an encapsulation compound [9] is introduced [paragraph 0031].

With respect to claim 13, Suzuki discloses the electronic power module of claim 1. Suzuki discloses the electronic power module is for an electronic motor controller for a soft-starting motor [paragraphs 0020 and 0021].

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With respect to claim 14, Suzuki discloses the electronic power module as claimed in claim 2. Suzuki (Figs. 1-4) further discloses at least one of the first and second cooling device include a metal rail [104] for directly transporting heat away from the semiconductor device and for making electrical contact with the semiconductor device.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki.

With respect to claim 6, Suzuki discloses the electronic power module as claimed in claim 1. Suzuki discloses it is well known for a semiconductor device to include two semiconductor elements electrically connected in parallel. Suzuki does not specify the two semiconductor elements are connected back-to-back. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the semiconductor elements of Suzuki to be connected back-to-back in order to minimize the size of the semiconductor device. Note paragraph 0007 of the APA is cited to support this well-known position.

With respect to claim 7, Suzuki discloses the electronic power module as claimed in claim 6. Suzuki further discloses the semiconductor elements are in the form of semiconductor cells without a housing [paragraph 0027].

Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki in view of Ohki.

With respect to claim 5, Suzuki discloses the electronic power module as claimed in claim 3. Suzuki does not specify the respective metal rail and the at least one heat sink are composed of at least one of copper and aluminum. However, Ohki (Figs. 2A, 2B, 3) discloses it is well known in the art for the respective rail [5] and the at least one heat sink [12] are composed of at least aluminum [column 8 lines 33-49]. Ohki teaches it is beneficial for the respective rail and the at least one heat sink to be composed of at least aluminum because of the metal's satisfactory heat conductivity [column 8 lines 48-49]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the respective metal rail and the at least one heat sink to be composed of aluminum because of the metal's satisfactory heat conductivity.

With respect to claim 15, Suzuki discloses the electronic power module as claimed in claim 4. Suzuki does not specify the respective metal rail and the at least one heat sink are composed of at least one of copper and aluminum. However, Ohki (Figs. 2A, 2B, 3) discloses it is well known in the art for the respective rail [5] and the at least one heat sink [12] are composed of at least aluminum [column 8 lines 33-49]. Ohki teaches it is beneficial for the respective rail and the at least one heat sink to be composed of at least aluminum because of the metal's satisfactory heat conductivity [column 8 lines 48-49]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the respective metal rail and the at least one heat sink to be composed of aluminum because of the metal's satisfactory heat conductivity.

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Telephone/Fax Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leslie P. Cruz whose telephone number is 571-272-8599. The examiner can normally be reached on Monday-Friday 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue A. Purvis can be reached on 571-272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



lpc

Leslie Pilar Cruz
Examiner
Art Unit 2826